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United States Patent [19]

Wiley

[11] **Patent Number:** 5,203,788[45] **Date of Patent:** * Apr. 20, 1993[54] **MICROMOTOR ACTUATED ADJUSTABLE FOCUS LENS**[76] **Inventor:** Robert G. Wiley, 4545 Brookside Rd., Toledo, Ohio 43615[*] **Notice:** The portion of the term of this patent subsequent to Apr. 28, 2009 has been disclaimed.[21] **Appl. No.:** 669,499[22] **Filed:** Mar. 14, 1991[51] **Int. Cl.⁵** A61F 2/16[52] **U.S. Cl.** 623/6[58] **Field of Search** 623/6; 350/419, 423[56] **References Cited****U.S. PATENT DOCUMENTS**

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[57] **ABSTRACT**

An adjustable focus lens apparatus includes a transparent lens body having a periphery, and a relatively rigid outer ring extending about the periphery of the lens body and a plurality of micromotor devices spaced equally about and coupled between the ring and the periphery. Each of the micromotor devices is responsive to an externally generated control signal for selectively changing the circumference and/or axial position of an associated portion of the periphery to adjust the lens for power and astigmatism correction. In several embodiments, the periphery includes an inner ring coupled to the outer ring by the micromotor devices. In another embodiment, the ring is formed of segments and the micromotor devices are included in overlapping portions of the segments.

7 Claims, 4 Drawing Sheets